GE Energy

X$D Ultra® 841

NEMA Premium®
Extra Severe Duty Motors
143-449 Frame
0.75-300 HP

imagination at work

a product of
ecomagination

GE sets the standard...

We are dedicated to the future.

Since Edison's time at the leading edge of discovery, GE's mission has remained steadfast: to not only meet the world's changing needs, but to anticipate them.

With ecomagination, GE imagines and builds innovative solutions that help customers meet environmental challenges and improve their operating performance, while also benefiting the company and the world. As a global leader in energy, technology, manufacturing and infrastructure, GE is uniquely suited to help solve environmental dilemmas—today and for generations to come.

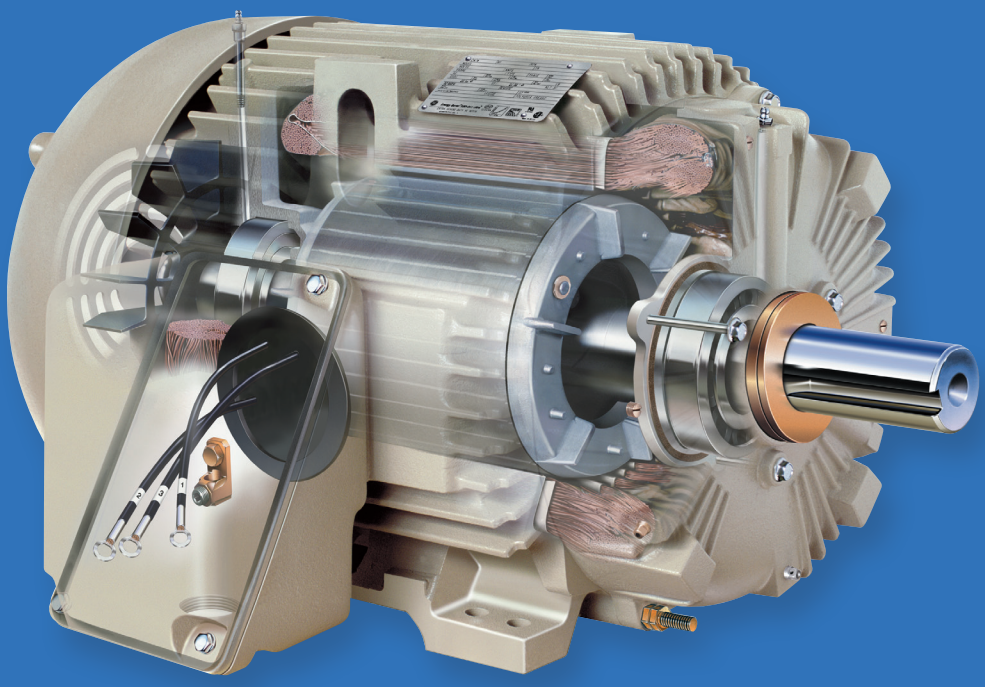
X$D Ultra® 841 meets these challenges.

Improved Customer Operating Performance

- The X$D Ultra® 841 meets or exceeds the IEEE 841-2009 Standard. With an advanced bearing system and Class H inverter duty insulation, a test report of each motor to ensure performance, five-year warranty and all the advanced features that come with it, the X$D Ultra® 841 is one of the most durable and reliable motor you can buy.

Improved Customer Environmental Performance

- Replacing one 100 HP, 1800 RPM Pre-EPAct motor (rewound once) with GE's X$D Ultra® 841 would save enough energy to power two US households for more than one year.
- If a US Industrial user replaced one 100 HP, 1800 RPM Pre-EPAct motor with an X$D Ultra®, greenhouse gas emissions could be reduced by as much as 15 metric tons per year.



EISAct 2007 Compliant

X$D Ultra® 841 motors comply with the US Energy Independence & Security Act which requires general purpose motors to meet efficiency levels based on NEMA MG1 table 12-12 as of December 19, 2010.

...with powerful features.

Superior Performance

The X$D Ultra® 841 meets or exceeds NEMA Premium® nominal efficiencies and exceeds all NEMA Premium® minimum guaranteed efficiencies. Each motor comes with its own test report demonstrating performance compliant with the IEEE 841-2009 specification.

- Overall vibration is 0.04 inches per second peak vs. 0.08 inches (0.06 for 8 pole) per second per IEEE 841. This helps to extend the life of the motor and the connected equipment.
- Total shaft runout is 0.001" for shaft diameters 0.875" to 1.625" inclusive and 0.0015" for shaft diameters greater than 1.625" for ball bearing machines.
- GEGARD2400™ insulation systems feature all Class H insulation materials. This system increases motor protection against IGBT drive voltage spikes up to 2,400 volts @ 0.1 microsecond rise time as an assembled motor, which exceeds NEMA MG1-31 standards.
- Meets NEMA design B starting currents.

Motor Decisions Matter℠
www.motorsmatter.org

NEMA® Premium

Bearings

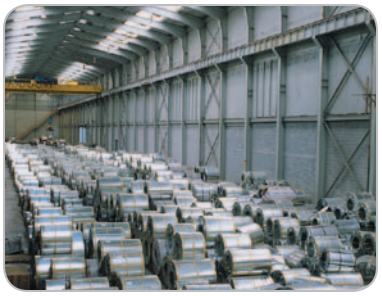
GE's Six Star Bearing System™ assures the maximum possible bearing life when combined with a maintenance program. For optimum performance the same over-sized bearing is used on both ends of the motor.

- A non-contact labryinth seal is integrated to both the drive-end and opposite drive-end, ensuring IP55 protection of the bearing system per IEEE 841-2009 specification.
- Fully charged lubrication system with a temperature-resistant polyurea grease suitable for a wide temperature range (-40°C to +130°C).
- An oversized single-shielded bearing is open towards the grease cavity for maximum lubricant circulation. This design provides 130,000 hours minimum bearing life for direct-drive loads, and 26,280 hours for L10 belt-driven loads.
- Low temperature rise designs (15% cooler on average than IEEE 841-2009 specification) increase bearing life.
- A gasketed cast-iron bearing inner cap retains lubricant and protects the bearing system and interior of the motor from contaminants.
- Finned endshield for improved heat dissipation and long bearing life (320-449 frame).

Proven Reliability

For years severe duty motors from GE have proven their performance and reliability in the most demanding process industry environments.

- A five-year warranty comes standard with every X$D Ultra® 841 motor. (60 months operational/66 months maximum from shipment.)
- Cast-in vibration pads provide mounting locations for a minimum of three axial and three radial probes.
- In an internal test, an X$D Ultra® 841 motor continued to operate after being subjected to 1,000,000 plug reversals.
- Rugged cast iron frame, conduit box, endshields and fan cover.
- Foot flatness tolerance of 0.005 inches provides easy alignment to connected equipment and further accentuates the benefit of 0.04 ips peak vibration.
- Draft angle on top of all mounting feet is 1.50 or less to ensure secure mounting is achieved.



Inverter Duty Application

The GEGARD2400™ insulation system exceeds both the IEEE 841-2009 specification and the requirements of NEMA MG1-31. It has the ability to withstand repeated 0.1 microsecond rise time/2400 volt spikes for 460 and 575 line voltages.

- Every X$D Ultra® 841 has an insulation system capable of inverter duty out of the box.

Serviceability

Even the best motors need service. Our design engineers have made improvements to help make service easy.

- An oversized gasketed conduit box, containing permanently labeled non-wicking Class H leads (with ring terminals), makes connection and installation easy.
- Dual mounting holes* for application versatlity and reduced inventory.

  * All frames other than 324.
- Stator core centered in frame for easy conversion to F2 mounting.
- Embossed nameplate with superior operational and maintenance information.

Superior Corrosion Protection

The motor frame, fan cover, endshield and conduit box are cast iron for severe duty. Rotor surfaces are coated to resist interior rust which helps maintain performance.

- Epoxy ester paint system meets IEEE 841-2009 specification paint requirements and stands up to corrosive environments.
- Non-sparking corrosion resistant, bidirectional fan* is quiet and energy efficient.

  * 2 pole are unidirectional (447-449 frame).
- Stainless steel combination breather/drains allow condensation to drain from motor.
- Corrosion resistant SAE Grade 5 hardware is rugged and designed for ease of motor service.
- Embossed 316 stainless steel nameplate stamped with over 30 motor specification details and all applicable standards.
- Leads are sleeved and are compatible with an oil mist lubrication system.

Safety

GE has added features which make this product safe to install, operate and maintain.

- Safer lifting is possible with a four-point cast-in lifting system versus a single eyebolt.
- Cast-in lifting lugs eliminate eyebolts that may strip, shear, get lost, or be improperly selected.
- Grease inlet fitting at 12 o'clock and outlet fitting at 8 o'clock position, which promotes safer regreasing.
- A silicon bronze box lug ground terminal is located in the conduit box. And an additional ground terminal post is located on the drive-end endshield for greater operational safety.
- Fan covers on frames 324-449 have axial mounting bolts for more rugged installation.
- For Division 2 applications: All GE Ultra® X$D 841 motors have an auxiliary nameplate with the following statement: Maximum exposed internal and external surface temperatures do not exceed 200°C under usual service conditions at 1.0 SF; 200°C is equivalent to a T3 temperature code. As an option, GE Motors can offer a Class I Division 2, CSA certified auxiliary nameplate.*

  * ASD (Adjustable Speed Drives) in Division 2 areas need to be reviewed. For this and more nameplate information please contact GE Motors.

...with a complete selection.

HP	RPM	Frame	460V	575V
0.75	1200	143T	M354	M355
	900	145T	M8901	
1	3600	143T	M8903	M8904
	1800	143T	M352	M353
	1200	145T	M363	M364
	900	182T	M9413	M9482
1.5	3600	143T	M8905	M8906
	1800	145T	M359	M360
	1200	182T	M9414	M9483
	900	184T	M9415	M9485
2	3600	143T	M8907	M8908
	1800	145T	M361	M362
	1200	184T	M9416	M9486
	900	213T	M9417	M9487
3	3600	182T	M9418	M9488
	1800	182T	M9419	M9489
	1200	213T	M9420	M9490
	900	215T	M9421	M9491
5	3600	184T	M9422	M9492
	1800	184T	M9423	M9493
	1200	215T	M9424	M9494
	900	254T	M9425	M9495
7.5	3600	213T	M9426	M9496
	1800	213T	M9427	M9497
	1200	254T	M9428	M9498
	900	256T	M9429	M9499
10	3600	215T	M9430	M9563
	1800	215T	M9431	M9564
	1200	256T	M9432	M9565
	900	284T	M9433	M9566
15	3600	254T	M9434	M9567
	1800	254T	M9435	M9568
	1200	284T	M9436	M9569
	900	286T	M9437	M9570
20	3600	256T	M9438	M9571
	1800	256T	M9439	M9572
	1200	286T	M9440	M9573
	900	324T	M9441	M9574
25	3600	284TS	M9442	M9575
	1800	284T	M9443	M9576
	1200	324T	M9444	M9577
	900	326T	M9445	M9578

HP	RPM	Frame	460V	575V
30	3600	286TS	M9446	M9579
	1800	286T	M9447	M9580
	1200	326T	M9448	M9581
	900	364T	M9449	M9582
40	3600	324TS	M9450	M9583
	1800	324T	M9451	M9584
	1200	364T	M9452	M9585
	900	365T	M9453	M9586
50	3600	326TS	M9454	M9587
	1800	326T	M9455	M9588
	1200	365T	M9456	M9589
	900	404T	M9457	M9590
60	3600	364TS	M9458	M9591
	1800	364T	M9459	M9592
	1200	404T	M9460	M9593
	900	405T	M9461	M9594
75	3600	365TS	M9462	M8917
	1800	365T	M9463	M9596
	1200	405T	M9464	M9597
	900	444T	M9465	M9598
100	3600	405TS	M9466	M8918
	1800	405T	M9467	M9693
	1200	444T	M9468	M9694
	900	445T	M9469	M9695
125	3600	444TS	M9470	M8919
	1800	444T	M9471	M9697
	1200	445T	M9472	M9698
	900	447T	M9473	M9699
150	3600	445TS	M9474	M8920
	1800	445T	M9475	M9384
	1200	447T	M9476	M9385
	900	449T	M8937	M8938
200	3600	447TS	M9477/M8978	M8939
	1800	447T	M9478	M9387
	1200	449T	M8940	M8941
	900	449T	M8942	*
250	3600	449TS	M8943/M8979	M8944
	1800	449T	M8945	M8946
	1200	449T	M8947	*
300	3600	449T	M8948	*
	1800	449T	M8949	*

* For ratings not listed consult your local GE representative

460 Typical Volt Performance Data

HP	FL RPM	NP FLA	Design LRA	NEMA B LRA	Code KVA/HP	FLT (lb-ft)	LRT (lb-ft)	BDT (lb-ft)	NP Eff. Full Load	Guar. Eff. Full Load	75% Load Eff	50% Load Eff	NP PF Full Load	75% Load PF	50% Load PF	Max KVAR
0.75	1150	1.4	7.5	12.5	P	3.4	9.5	12.3	80.0	78.5	81.1	78.3	63.5	54.4	42.0	0.6
0.75	855	1.9	7.2	12.5	P	4.6	11.5	14.8	72.0	70.0	72.4	67.5	52.0	43.1	32.9	1.0
1	1750	1.4	11.9	15.0	N	3.0	11.5	14.0	86.5	85.5	86.9	84.8	76.0	68.0	55.1	0.5
1	1155	1.8	10.8	15.0	N	4.5	14.3	18.1	82.5	81.5	83.2	80.7	62.5	53.5	41.1	0.8
1	875	2.2	10.4	15.0	N	6.0	11.0	18.9	80.0	78.5	79.3	75.3	52.5	43.8	33.2	1.2
1.5	3530	2.0	18.6	20.0	M	2.2	7.4	9.6	87.5	86.5	89.6	88.5	80.5	73.7	61.3	0.6
1.5	1740	2.1	16.9	20.0	M	4.5	16.7	19.8	86.5	85.5	87.5	86.1	77.5	69.8	56.8	0.8
1.5	1175	2.4	17.4	20.0	M	6.7	14.7	27.8	87.5	86.5	88.4	86.6	68.0	59.5	46.7	1.0
1.5	870	3.2	14.7	20.0	M	9.0	16.7	26.1	80.0	78.5	80.0	76.7	55.5	46.7	35.6	1.6
2	3515	2.7	23.1	25.0	L	3.0	9.2	11.9	86.5	85.5	89.0	88.2	80.0	72.7	59.9	0.8
2	1735	2.7	21.0	25.0	L	6.1	21.2	24.8	86.5	85.5	88.0	87.2	80.0	72.8	60.2	0.9
2	1170	3.0	22.6	25.0	L	9.0	19.6	36.1	88.5	87.5	88.9	87.5	69.5	61.3	48.4	1.2
2	880	3.8	20.5	25.0	L	12.0	20.1	38.4	86.5	85.5	85.9	83.3	57.0	48.6	37.2	1.9
3	3530	3.8	25.8	32.0	K	4.5	8.1	14.0	89.5	88.5	91.3	90.8	82.0	76.4	65.1	1.0
3	1760	4.2	29.2	32.0	K	8.9	23.1	30.2	89.5	88.5	89.8	88.8	75.5	68.4	55.9	1.5
3	1175	4.3	29.9	32.0	K	13.0	26.5	41.4	89.5	88.5	89.7	88.5	73.0	66.0	53.8	1.7
3	875	5.4	27.8	32.0	K	18.0	29.1	51.2	86.5	85.5	86.6	84.9	60.5	52.8	41.0	2.5
5	3535	6.1	43.7	46.0	J	7.4	14.9	23.9	90.2	89.5	91.1	90.1	84.5	80.0	70.3	1.5
5	1755	6.6	42.9	46.0	J	15.0	35.0	44.0	89.5	88.5	90.9	90.5	79.0	73.9	63.0	2.0
5	1170	6.8	42.8	46.0	J	22.0	39.7	59.1	89.5	88.5	90.5	90.3	77.0	71.6	60.6	2.2
5	880	7.6	40.5	46.0	J	30.0	48.8	82.4	89.5	88.5	89.7	88.4	69.0	61.1	48.6	3.2
7.5	3535	8.4	60.8	63.5	H	11.0	24.4	30.7	91.0	90.2	92.0	91.3	91.5	89.9	85.4	1.4
7.5	1770	9.2	60.4	63.5	H	22.0	42.3	59.0	91.7	91.0	92.3	91.8	83.5	80.6	72.5	2.2
7.5	1175	9.6	60.7	63.5	H	34.0	65.2	91.8	91.7	91.0	92.4	91.7	79.5	74.5	63.9	2.9
7.5	880	11.3	60.6	63.5	H	45.0	77.8	122.5	89.5	88.5	90.2	89.2	69.5	62.0	49.5	4.6
10	3525	11.3	76.0	81.0	H	15.0	31.1	38.7	91.0	90.2	92.1	91.9	91.0	90.1	85.9	1.8
10	1765	12.2	77.2	81.0	H	30.0	55.6	75.6	91.7	91.0	92.4	92.3	84.0	81.1	73.4	2.9
10	1170	12.7	72.3	81.0	H	45.0	79.1	110.6	91.0	90.2	92.0	91.9	81.0	76.7	66.8	3.6
10	885	13.6	75.2	81.0	H	60.0	84.3	136.8	89.5	88.5	91.1	91.2	77.0	72.6	62.3	4.0
15	3550	16.9	108.1	116.0	G	22.0	44.7	50.7	91.7	91.0	92.6	92.4	90.5	90.3	87.4	2.3
15	1770	17.8	110.5	116.0	G	45.0	97.3	114.6	92.4	91.7	93.1	93.0	85.5	82.3	73.8	4.4
15	1185	19.1	109.5	116.0	G	67.0	98.0	164.3	91.7	91.0	92.8	92.4	80.0	74.9	64.3	5.8
15	880	20.1	111.6	116.0	G	90.0	133.4	207.2	89.5	88.5	91.0	91.4	78.0	73.9	64.0	5.7
20	3550	22.1	147.0	145.0	G	30.0	70.2	65.4	92.4	91.7	93.3	93.4	91.5	91.6	89.7	2.5
20	1770	22.9	140.6	145.0	G	59.0	133.4	142.9	93.0	92.4	93.8	94.0	88.0	85.7	79.3	4.6
20	1180	25.4	142.1	145.0	G	89.0	130.1	214.3	91.7	91.0	93.1	92.8	80.5	75.8	65.6	7.4
20	875	29.6	137.2	145.0	G	120.0	191.0	264.6	91.0	90.2	92.1	91.6	69.5	63.1	51.3	11.2
25	3555	27.2	181.6	182.5	G	36.9	96.5	94.2	93	92.4	93.3	92.9	92.5	91.7	88.3	3.9
25	1775	29.1	174.8	182.5	G	73.9	122.9	181.4	93.6	93	94.1	94	86	82.8	74.7	7
25	1180	31.5	173.1	182.5	G	111.3	213.5	252	93	92.4	93.7	93.3	80	75.6	66	8.9
25	875	36.5	167.5	182.5	G	150.2	238.5	323.7	91	90.2	92.2	91.8	70.5	64.3	52.7	13.3
30	3550	32.5	217.3	217.5	G	44.4	123.4	111.8	93	92.4	93.7	93.5	93	92.3	89.3	4.3
30	1775	34.7	206.4	217.5	G	88.7	147.3	210.7	93.6	93	94.1	94.2	86.5	83.7	76.2	7.9
30	1180	38	210.6	217.5	G	133.7	265.6	309.1	93	92.4	93.7	93.4	79.5	75.3	65.5	10.9
30	890	41.6	187.8	217.5	G	177.2	242.8	387.4	92.4	91.7	94.2	93.6	73	67.2	55.7	14.4
40	3570	47.1	270.2	290	G	58.8	89	144.4	94.1	93.6	93.9	92.8	84.5	81.4	73.1	11.9
40	1780	48	260	290	G	117.9	199.1	279.8	94.5	94.1	94.9	94.6	82.5	78.1	68.5	13.4
40	1185	48.8	263.8	290	G	176.9	264	425.4	94.1	93.6	94.8	94.4	81.5	76.9	66.8	14
40	890	54.8	253.2	290	G	236.3	336.2	522.7	93	92.4	94.4	93.9	73.5	67.4	56	19
50	3570	57.3	324.5	362.5	G	73.6	117	171	94.5	94.1	94.5	93.7	86.5	84.4	77.6	12.4
50	1780	60.4	325.6	362.5	G	147.6	255.7	350.7	94.5	94.1	95	94.7	82	77.7	67.9	17.1
50	1185	61	324.3	362.5	G	221.3	331.6	524.5	94.1	93.6	95	94.7	81.5	77.1	67.2	17.3
50	885	66.2	332.7	362.5	G	297.2	443.8	753.8	93	92.4	94.4	94	76	70.1	58.5	22.4
60	3570	69.1	412.9	435	G	88.2	129	222.8	95	94.5	95	94.1	85.5	82	73.5	17.5
60	1780	70	403.7	435	G	176.8	286.3	433.2	95	94.5	95.3	95.1	84.5	80.9	72	18
60	1190	71.7	401.6	435	G	264.2	380.7	614.8	95	94.5	95.3	94.8	82.5	78.5	69.3	19.3
60	885	78.9	399.7	435	G	356.8	545.6	909	93	92.4	94.7	94.4	76.5	70.8	59.4	26.1
75	3570	83.1	504.7	542.5	G	110.3	180.8	269.4	95.4	95	95.6	95	88.5	86.4	80.1	16.9
75	1780	86.1	516.9	542.5	G	220.9	391.8	552.3	95.4	95	95.7	95.6	85.5	82.4	74.1	20.8
75	1190	89.6	510.2	542.5	G	330.3	498.4	779.7	95	94.5	95.5	95.1	82.5	78.7	69.5	24
75	890	93.4	481.3	542.5	G	442.2	614.6	1018.2	94.5	94.1	95.3	94.8	79.5	75.1	65.3	27
100	3570	108	706.3	725	G	147.1	244.1	384.9	95.4	95	95.8	95.6	91	89.8	85.6	17.3
100	1785	118	589	725	G	293.9	429.8	670.9	95.8	95.4	96.1	95.9	83	79.4	70.4	31.2
100	1195	116	691.8	725	G	440.2	603.7	1078.8	95.4	95	95.4	94.9	84.5	81.6	73.4	28.2
100	890	125	643	725	G	589.9	846.6	1370.4	94.5	94.1	95.4	95	79.5	75.1	65.2	36.1
125	3580	139	824.3	907.5	G	183.3	220.9	467.6	95.4	95	95.6	95.2	88.5	86.2	79.8	28.6
125	1785	140	831.1	907.5	G	367.9	654	937.3	95.8	95.4	95.9	95.6	87	84.1	76.5	32.2
125	1190	149	857.1	907.5	G	550.6	996.5	1306.4	95.4	95	95.6	95.1	82.5	78.9	69.8	39.7
125	890	155	828	907.5	G	737.7	1136.3	1796.4	95	94.5	95.4	95.2	79.5	75.7	66	43.9
150	3580	162	1016.6	1085	G	220	314.8	569.1	95.8	95.4	96.1	95.8	90.5	88.9	84	28.3
150	1790	166	1001.4	1085	G	439.8	523.6	1108.4	96.2	95.8	96.4	96.2	88	85.8	79.1	34.6
150	1195	171	1034.2	1085	G	660.4	1010.2	1758.8	95.8	95.4	95.8	95.6	85.5	82.8	75.2	39.3
150	890	184	975.7	1085	G	885.1	1348.5	2081.7	95	94.5	95.7	95.6	80.5	77	68	48.8
200	3580	211	1385	1450	G	293.2	511.4	832.8	95.8	95.4	95.9	95.5	92.5	92	89.2	27.4
200	1790	218	1334.3	1450	G	586.2	744.3	1497.3	96.5	96.2	96.7	96.6	89	87.1	81.3	41.6
200	1190	227	1345.1	1450	G	881	1349.6	2294.5	95.8	95.4	96	95.9	86	83.3	76.1	50.4
200	890	245	1377.2	1450	G	1180.7	1971.9	2988.6	95.4	95	95.7	95.5	80	75.8	66.1	69.9
250	3580	265	1707.8	1825	G	366.7	601.8	1025.1	95.8	95.4	96	95.8	92	91.6	88.4	36.4
250	1790	272	1529.2	1825	G	733	868.3	1725.5	96.5	96.2	96.9	96.8	89	87.8	82.9	47.1
250	1195	294	1822.3	1825	G	1099.9	1495.1	3152.6	95.8	95.4	96.2	96.1	83	79.1	69.7	79.2
300	3580	319	2099.3	2200	G	440.1	717.2	1242.4	95.8	95.4	96.2	96.1	92	91.5	88.2	44.4
300	1790	332	1995.4	2200	G	879.2	1118.7	2242	96.2	95.8	96.4	96	88	86.2	80	65.9

For more information, please contact your GE sales representative.

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